

2019 NH SEAT BELT OBSERVATION STUDY

FOR

NH HIGHWAY SAFETY AGENCY

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Introduction

The University of New Hampshire Survey Center conducted an observation of seat belt use in New Hampshire in June, 2019. The goal of this study was to measure seat belt usage by passenger vehicles on New Hampshire roads. The study was conducted for the New Hampshire Highway Safety Agency and was conducted in accordance with a research design approved by the National Highway Traffic Safety Agency (NHTSA).

The National Highway Traffic Safety Administration (NHTSA) issued new Uniform Criteria for State Observational Surveys of Seat Belt Use. The final rule was published in Federal Register Vol. 76 No. 63, April 1, 2011, Rules and Regulations, pp. 18042 – 18059. This survey was approved by NHTSA and is fully compliant with the Uniform Criteria.

A major difference between the 2018 and 2019 surveys and earlier years is that new observation sites were selected under the new Uniform Criteria for 2018. The methodology used in 2018 and 2019 is very similar to that used the 2013 - 2017 surveys with the exception of the sites observed. Surveys conducted prior to 2012 used a different methodology.

Study Design

New Hampshire is composed of 10 counties; seven of which account for 88.1% of the passenger vehicle crash-related fatalities according to Fatality Analysis Reporting System (FARS) data averages for the period 2010 to 2014. All of these seven counties were observed.

A list of New Hampshire road segments was obtained from NHTSA that have been classified by the U.S. Census Bureau using the MAF/TIGER Feature Class Code (MTFCC). There are three classifications of roads included in this study: 1) Primary Roads, 2) Secondary Roads, and 3) Local Roads (including city streets and rural roads in counties within an MSA) included in this file (see Table 1 for detailed definitions). Simple random sampling (SRS) was employed to select the road segments to be used as observation sites within each of these three strata in the seven NH counties included.

Table 1 – New Hampshire MTFCC Codes Included by Default in the Road Segment File

Code	Name	Definition
S1100	Primary Road	Primary roads are generally divided, limited-access highways within the interstate highway system or under state management, and are distinguished by the presence of interchanges. These highways are accessible by ramps and may include some toll highways.
S1200	Secondary Road	Secondary roads are main arteries, usually in the U.S. Highway, State Highway or County Highway system. These roads have one or more lanes of traffic in each direction, may or may not be divided, and usually have at-grade intersections with many other roads and driveways. They often have both a local name and a route number.
S1400	Local Neighborhood Road, Rural Road, City Street	These are generally paved non-arterial streets, roads, or byways that usually have a single lane of traffic in each direction. Roads in this feature class may be privately or publicly maintained. Scenic park roads would be included in this feature class, as would (depending on the region of the country) some unpaved roads.

All passenger vehicles with a gross vehicle weight up to 10,000 pounds were observed in the survey. This includes small commercial vehicles. The target population is all drivers and right front seat passengers (excluding children harnessed in child safety seats) of these vehicles who travel on public roads between the hours of 7 AM and 6 PM. The observation period for each selected road segment was one hour.

Data collection was conducted by pairs of observers who received eight hours of classroom and field training. Quality Control (QC) Monitors made unannounced visits to at least 25% of the scheduled data collection locations in order to ensure that data are being collected according to the research protocol.

Sample Design

The research design conforms to the requirements of the Uniform Criteria and generates annual estimates of occupant restraint use for adults and children using booster seats in the front seats of passenger vehicles. New Hampshire intends to update the sample of data collection sites every five years in order to have survey results that reflect geographic areas with more than 85% of crash-related fatalities. The design approach includes a simple random sample (SRS) of data collection sites and as described below:

1. All 10 counties in New Hampshire were listed in descending order of the average number of motor vehicle crash-related fatalities for the period of 2010 to 2014. Fatality Analysis Reporting System (FARS) data were used to determine the average number of crash-related fatalities per county. It was determined that seven counties accounted for 88.1% of New Hampshire's total crash-related fatalities, greater than the 85% required in the Final Rule. These 7 counties comprise the sample frame for the survey. See Table 2.
2. Road segments were selected randomly with SRS from all segments in the sampled counties included in the file provided by NHTSA. The road segments were stratified by MTFCC (see Table 1). A random sample of 40 road segments was selected using SRS within these MTFCC segments for a total of 120 road segments. This represents the second stage of sample selection. Additional sites were also selected as alternate sites, if they are necessary.
3. It is expected there will be a sample size of approximately 200 vehicles per observation site and 19,000 vehicles overall based on New Hampshire Annual Seat Belt Use Studies conducted between 2012 and 2017. Based on this number of observations, the standard error is expected to be less than the required 2.5%
4. Additional stages of selection were used to determine, travel direction, lane, and vehicles to be observed, at random and with known probability

Table 2 - NH Average Motor Vehicle Crash-Related Fatalities by County 2010-2014*

County	Average Fatality Counts (2010-2014)	Fatality Percentage Within New Hampshire	Cumulative Fatality Percentage
Hillsborough	25.0	22.5	22.5
Rockingham	23.4	21.0	43.5
Merrimack	13.2	11.9	55.4
Strafford	10.0	9.0	64.4
Cheshire	9.8	8.8	73.2
Grafton	9.6	8.6	81.8
Carroll	7.0	6.3	88.1
Belknap	5.4	4.9	93.0
Sullivan	4.4	4.0	96.9
Coos	3.4	3.1	100.0

*Fatality data from the Fatality Analysis Reporting System (FARS) 2010-2014

Sample Size and Precision

A standard error of less than 2.5% for the seat belt use estimates is required by the Final Rule. Since the revised model was approved (starting in 2013), the University of New Hampshire Survey Center has conducted the New Hampshire Annual Seat Belt Use Study and has obtained standard errors which averaged 1.2%, much lower than the 2.5% standard error required in the Final Rule.

The new design is identical to the 2013-2017 surveys but with new observation sites selected at random as they were in the 2012 Observation Plan.

Road Segment Selection

A total of 120 road segments were selected with SRS from the seven included counties. New Hampshire employed Census TIGER data for the selection of road segments. New Hampshire exercised the available exclusion option and removed rural local roads in counties that are not within Metropolitan Statistical Areas (MSAs), and other non-public roads, unnamed roads, unpaved roads, vehicular trails, access ramps, cul-de-sacs, traffic circles, and service drives from the dataset.

Road segments within each county were first explicitly stratified by MTFCC classification (Primary, Secondary and Local). Road segments within strata were selected with SRS. SRS was used as New Hampshire does not have VMT for most secondary and local road segments (Table 3).

So that different seat belt usage behaviors are not excluded and also that high volume road segments (primary roads) are not excluded, all three types of road segment are included for observation -- 40 Primary Road segments, 40 Secondary Road segments, and 40 Local Roads, Rural Roads, or City Street segments.

The sampling procedure was done in Excel. A random number between 0 and 1 was generated for each road segment within the three strata. Segments within each stratum were then ordered by this random number, and 40 segments were selected with the highest random number. The chance of selection for all segments within strata is equal. Chance of selection is .02649 for primary road segments (40 selected segments / 1510 total primary segments), .00197 for secondary road segments, and .00036 for local road segments.

Table 3 - Roadway Functional Strata by Road Segments, Number of Segments (N), Length, Observed Volume, and Number of Segments Selected (n)

		MTFCC Strata			Total
		Primary	Secondary	Local	
Seven NH Counties	N	1,510	20,346	112,607	134,463
	Length	391	2,576	13,728	16,695
	n	40	40	40	120

Reserve Sample

In the event that an original road segment is permanently unavailable, a reserve road segment will be used. The reserve road segment sample consists of 15 additional sites (5 for each road type), selected at random in the same manner as the original segment (salternate segments are listed in Appendix B). These segments are considered selected with SRS by the same approach as described in Section 3.3. With this in mind, for the purposes of data weighting, the reserve road segment inherits all probabilities of selection and weighting components up to and including the road segment stage of selection from the original road segment actually selected. Probabilities and weights for any subsequent stages of selection (e.g., the sampling of vehicles) will be determined by the reserve road segment itself.

Data Collection

Site Selection

Road segments were mapped according to the latitude and longitude of their midpoints. The selected road segment was identified by an intersection or interchange that occurred within or just beyond the segment. If no intersection or interchange occurred within the segment, then any point on that road could be used for observation. Data collection sites were deterministically selected such that traffic would be moving during the observation period. Therefore, sites were assigned to locations within the segment that were 50 yards from any controlled intersections. For interstate highways, data collection will occur on a ramp carrying traffic that is exiting the highway. The observed direction of travel was randomly assigned for each road segment. The locations of the data collection sites were described on Site Assignment Sheets for each county and maps were developed to aid the Data Collectors and QC Monitors in travelling to the assigned locations.

Training

Data Collectors operated in four, two-person teams with one person observing and the recording their observations. A QC Monitor observed and monitored the Data Collector teams. Data Collector and QC Monitor training was conducted at the UNH Survey Center during the week prior to the data collection period, in May 2019. It included lecture and classroom and field exercises. The syllabus is shown as Figure 1.

Figure 1 – Training Syllabus

Welcome and distribution of equipment
Survey overview
Data collection techniques <ul style="list-style-type: none">Definitions of belt/booster seat use, passenger vehiclesObservation protocolWeekday/weekend/rush hour/non-rush hourWeather conditionsDuration at each site
Scheduling and rescheduling <ul style="list-style-type: none">Site Assignment SheetDaylightTemporary impediments such as weatherPermanent impediments at data collection sites
Site locations <ul style="list-style-type: none">Locating assigned sitesInterstate ramps and surface streetsDirection of travel/number of observed lanesNon-intersection requirementAlternate site selection
Data collection forms <ul style="list-style-type: none">Cover sheetRecording observationsRecording alternate site information
Assembling forms for shipment
Safety and security
Timesheet and expense reports
Field practice at ramps and surface streets

Observation Periods and Quality Control

Observations were conducted during weekdays and weekends between 7 a.m. and 6:00 p.m. The schedule included rush hour (before 9:30 AM and after 3:30 PM) and non-rush hour observations. Data collection was conducted for 60 minutes at each site, with approximately 5 sites scheduled per team each day. Start times were staggered to ensure that a representative number of weekday/weekend/ rush hour/non-rush hour sites were included.

Maps showing the location of all observation sites and Site Assignment Sheets were provided to the Data Collectors and QC Monitors. These indicate the observed road name, the crossroad included within the road segment (or nearest crossroad), assigned date, assigned time, and assigned direction of travel. Sites within relatively close geographic proximity were assigned as data collection clusters. The first site within each cluster were assigned a random day and time for completion. All other sites within a cluster were assigned to the same day in order to minimize travel costs. They were scheduled by geographic proximity to minimize travel within the cluster. Because of rain during the 2019 observation period, several sites were rescheduled to the following week, at the same time and day of the week.

Data Collection

All passenger vehicles, including commercial vehicles weighing less than 10,000 pounds, will be eligible for observation. (The data collection cover sheet and observation form are shown as Appendix C.) The cover sheet was designed to allow for documentation of descriptive site information, including: date, site location, site number, alternate site data, assigned traffic flow, number of lanes available and observed, start and end times for observations, and weather conditions. This cover form was completed by the Data Collector at each site.

The observation form records seat belt use by drivers and front seat passengers. Additional observation forms can be used when more than 40 vehicles are observed at a site. The forms will be labeled as 1 of 2, and 2 of 2, etc.

The data collector observed as many lanes of traffic as s/he can comfortably monitor while obtaining data on 99% of the vehicles. Only one direction of traffic will be observed at any given site. This direction is pre-determined.

Observations were made of all drivers and right front seat occupants. This includes children riding in booster seats. *The only right front seat occupants excluded from this study are child passengers who are traveling in child seats with harness straps.* The codes in Table 4 will be used to record seat belt use.

Table 4 - Seat Belt Use Codes and Definitions

Code	Meaning	Definition
Y	Yes, belted	The shoulder belt is in front of the person's shoulder.
N	No, unbelted	The shoulder belt is not in front of the person's shoulder.
U	Unknown	It cannot reasonably be determined whether the driver or right front passenger is belted.
NP	No passenger	There is no right front passenger present.

According to the codes above, both a vacancy for the right front passenger or a child, restrained in a car seat with harnesses would be coded as NP since we do not observe harnessed children in this study.

Alternate Sites and Rescheduling

When a site is temporarily unavailable due to a crash or inclement weather, data collection will be rescheduled for a similar time of day and type of day of week. In the event that the site is permanently unworkable, such as located within a gated community, then an alternate site, selected as part of the reserve sample, will be used as a permanent replacement. The alternate will be selected as needed, in order starting at site P41, S41 or L41, from the sites in Appendix B. If the selected reserve is also permanently unworkable, then the Data Collector will use the next reserve site listed in the Appendix. The Project Director (Andrew Smith) is the person who approves that an alternate site will be used and will assign the alternate site. Data will be collected at the alternate site at a similar time of day and type of day of the week as the original site. No alternate sites were used in 2019.

Quality Control Procedures

The QC Monitor made unannounced visits to 83 of the 120 data collection sites. Sites were observed in each county. During these visits, the QC Monitor first evaluated the Data Collector's performance from a distance (when possible), and then worked alongside the Data Collector. The QC Monitor ensured that the Data Collector followed all survey protocol including: being on time at assigned sites, completing the cover sheet and observation forms, and making accurate observations of seat belt use.

In the event it was discovered that a Data Collector has falsified data, the Data Collector would be replaced by a back-up Data Collector. The back-up Data Collector would then revisit all sites proven to be or suspected to be falsified and recollect all data. This did not happen in 2019.

At the end of each day, the Data Collector returned forms to the UNH Survey Center and the QC Monitor reviewed the forms. If the rate of unknowns exceeded 10% for any site (potentially leading to an overall nonresponse rate of 10% or more), then the Data Collector would have been sent back to that site for an additional observation period. No site exceeded 10% unknown.

Imputation, Estimation and Variance Estimation

Sampling Weights

The following is a summary of the notation used in this section.

- h – Subscript for road segment strata
- i – Subscript for road segment
- j – Subscript for time segment
- k – Subscript for road direction
- l – Subscript for lane
- m – Subscript for vehicle
- n – Subscript for front-seat occupant

Under this stratified multistage sample design, the inclusion probability for each observed vehicle is the product of selection probabilities at all stages: π_{hi} for road segment, $\pi_{j|hi}$ for time segment, $\pi_{k|hij}$ for direction, $\pi_{l|hijk}$ for lane, and $\pi_{m|hijkl}$ for vehicle. So the overall vehicle inclusion probability is:

$$\pi_{hijklm} = \pi_{hi}\pi_{j|hi}\pi_{k|hij}\pi_{l|hijk}\pi_{m|hijkl}.$$

The sampling weight (design weight) for vehicle m is:

$$w_{hijklm} = \frac{1}{\pi_{hijklm}}$$

Nonresponse Adjustment

Given the data collection protocol described in this plan, including the provision for the use of alternate observation sites, road segments with non-zero eligible volume and yet zero observations conducted should be a rare event. Nevertheless, if eligible vehicles passed an eligible site or an alternate eligible site during the observation time but no usable data were collected for some reason, then this site will be considered as a “nonresponding site.” The weight for a non-responding site will be distributed over other sites in the same road segment type. Let:

$$w_{hi} = \frac{1}{\pi_{hi}}$$

be the road segment weight. The nonresponding site nonresponse adjustment factor:

$$f_h = \frac{\sum_{all\ i} w_{hi}}{\sum_{responding\ i} w_{hi}}$$

will be multiplied to all weights of non-missing road segments in the same road type of the same county and the missing road segments will be dropped from the analysis file. However, if there were no vehicles passing the site during the selected observation time (60 minutes) then this is simply an empty block at this site and this site will not be considered as a nonresponding site, and will not require nonresponse adjustment.

Estimators

Seat Belt Use Rate Estimators

Noting that all front-seat occupants were observed, let the driver/passenger seat belt use status be:

$$y_{hijklmn} = \begin{cases} 1, & \text{if belt used} \\ 0, & \text{otherwise} \end{cases}$$

The seat belt use rate estimator is a ratio estimator:

$$\rho = \frac{\sum_{all\ hijklmn} w_{hijklm} y_{hijklmn}}{\sum_{all\ hijklmn} w_{hijklm}}.$$

This estimator captures traffic volume and vehicle miles traveled through design weights (which will include nonresponse adjustment factors as described in section 5.3, if any) at various stages and it does not require knowledge of VMT/DVMT.

Variance Estimation

Direct variance estimation for the seat belt use rate was calculated using the ratio procedure in STATA software along with the joint PSU selection probabilities to calculate the seat belt use rate and its variance.

Statewide Estimate of Seat Belt Usage

It is not possible to directly compare 2018 and 2019 usage rates with earlier studies because new selection sites were used beginning in 2018. It is also not possible to directly compare the 2012-2017 usage rates with earlier years because of changes in the methodology used. However, usage rates since 2006 are displayed in Table 5. One hundred-twenty (120) randomly selected sites were observed in 2019 and the weighted seat belt usage rate was 70.7.3% with a relative standard error of 1.28%. The unweighted statewide seat belt usage rate in 2019 was 70.4%.

Table 5: NH Seat Belt Usage Rates: 2006 through 2019¹

Seat Belt Usage (front seat outboard pass.)	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Seat belt usage rate:	63.5%	63.8%	69.2%	68.9%	72.2%	75.0%	68.5%
Unweighted usage rate:	64.2%	62.9%	68.4%	68.8%	72.0%	72.5%	68.1%
Standard error:	5.3%	9.4%	3.4%	2.8%	3.0%	3.0%	3.0%
95% conf. interval – upper:	73.9%	82.2%	75.9%	74.3%	78.0%	80.8%	74.5%
95% conf. interval – lower:	53.1%	45.4%	62.4%	63.5%	66.4%	69.2%	62.6%

Seat Belt Usage (front seat outboard pass.)	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Seat belt usage rate:	71.5%	70.4%	69.5%	70.2%	67.6%	76.4%	70.7%
Unweighted usage rate:	73.7%	71.8%	71.5%	70.2%	68.5%	76.6%	70.4%
Standard error:	1.11%	1.17%	1.13%	1.39%	1.23%	1.26%	1.28%
95% conf. interval – upper:	73.6%	72.7%	72.1%	73.0%	70.0%	78.9%	71.9%
95% conf. interval – lower:	69.3%	68.0%	66.8%	67.5%	65.1%	73.9%	66.8%

<u>Observations</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Observation sites:	150	120	120	120	120	120	120
Vehicles observed:	21,563	17,831	17,214	17,238	17,328	15,929	15,883
Total outboard passengers:	26,305	21,712	20,747	20,647	20,282	18,924	18,916

<u>Observations</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Observation sites:	120	120	120	120	120	120	120
Vehicles observed:	20,193	19,625	21,603	17,933	16,318	17,586	17,018
Total outboard passengers:	25,379	25,015	27,388	22,388	20,826	22,507	21,835

¹ Results from 2012-2017 cannot be directly compared with earlier studies because of methodological changes. Care must be used comparing 2018 and later rates to 2012-2017 rates as different sites were observed.

Chart 1: NH Weighted Seat Belt Usage Rates: 2006 - 2019

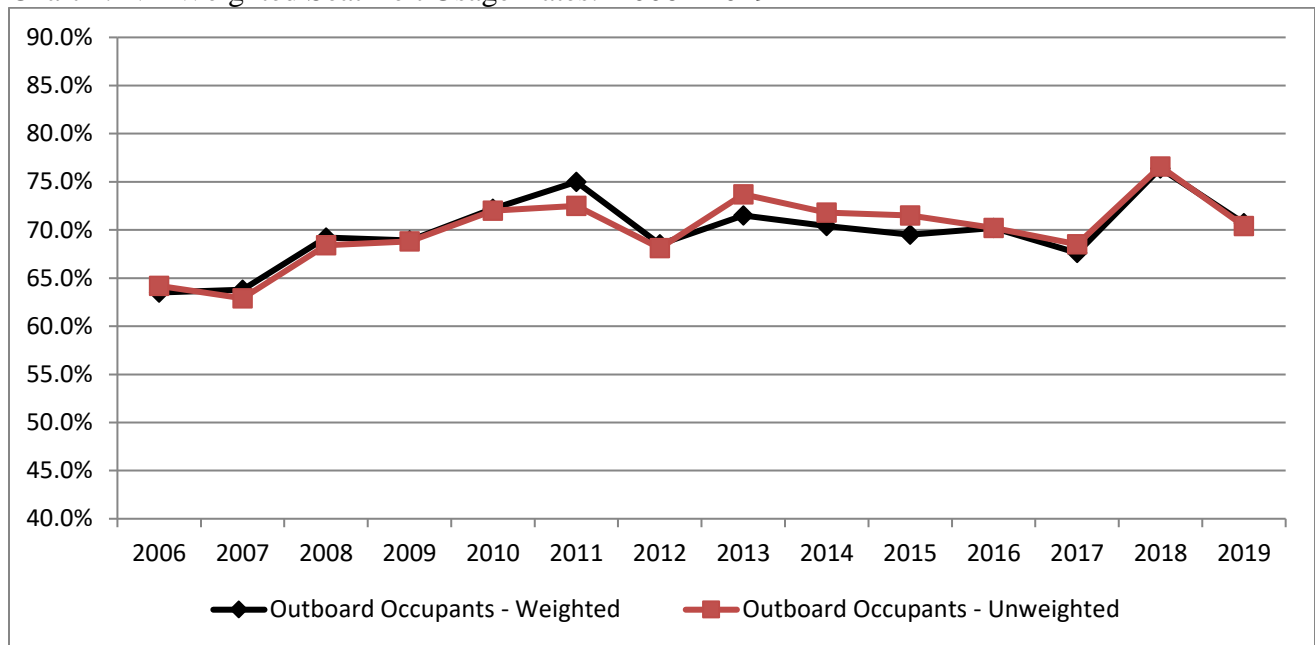


Chart 2: NH Seat Belt Usage Rates: Drivers by Type of Road (Unweighted), 2006 - 2019

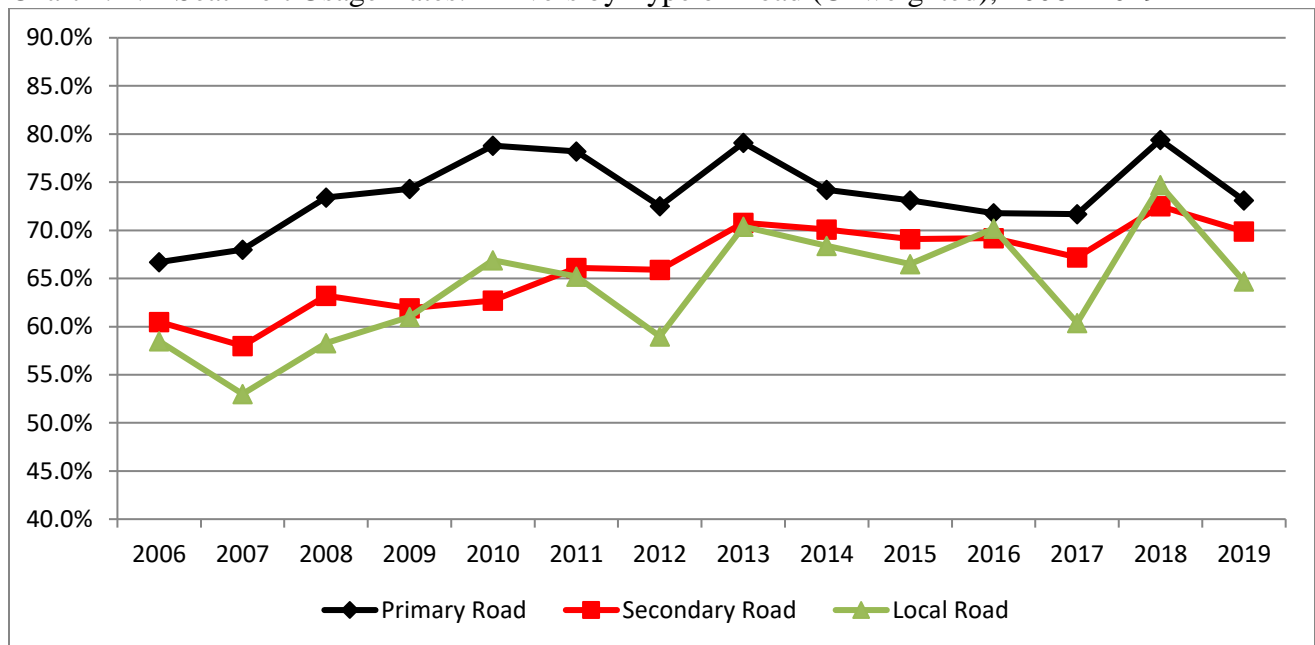
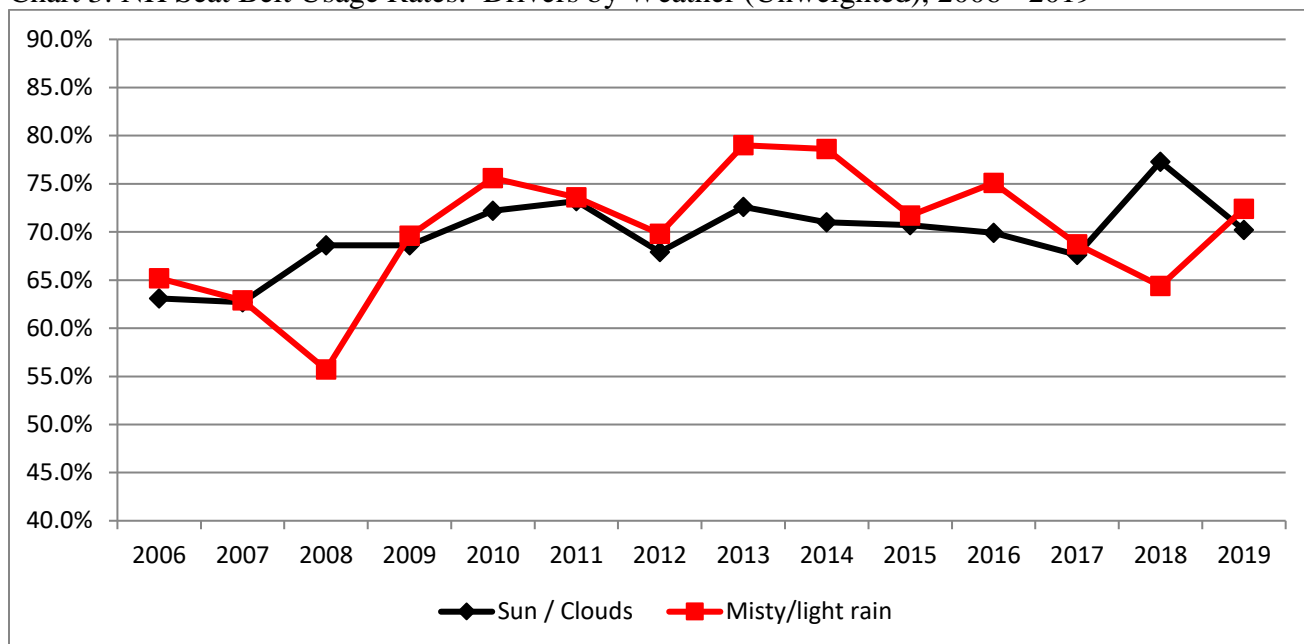


Chart 3: NH Seat Belt Usage Rates: Drivers by Weather (Unweighted), 2006 - 2019



UNWEIGHTED OBSERVATIONS - DRIVERS

	Drivers - Percent Belted						
	2006	2007	2008	2009	2010	2011	2012
Primary Road	66.7%	68.0%	73.4%	74.3%	78.8%	78.2%	72.5%
Secondary Road	60.5%	58.0%	63.2%	61.9%	62.7%	66.1%	65.9%
Local Road	58.5%	53.0%	58.3%	61.0%	66.9%	65.2%	59.0%
Sunny Weather	62.8%	59.5%	67.4%	68.9%	73.0%	73.2%	67.9%
Cloudy	64.0%	70.2%	73.6%	66.8%	69.3%	68.9%	68.9%
Misty/Fog	68.5%	65.8%	--	74.5%	77.7%	77.9%	61.8%
Light Rain	63.9%	53.4%	55.7%	66.3%	71.3%	69.0%	73.8%

	Drivers - Percent Belted						
	2013	2014	2015	2016	2017	2018	2019
Primary Road	79.1%	74.2%	73.1%	71.8%	71.7%	79.4%	73.1%
Secondary Road	70.8%	70.1%	69.1%	69.2%	67.2%	72.5%	69.9%
Local Road	70.4%	68.4%	66.5%	70.2%	60.4%	74.7%	64.7%
Sunny Weather	72.6%	71.0%	70.7%	69.9%	67.6%	77.3%	70.2%
Cloudy	--	--	--	--	--	--	--
Misty/Fog	--	--	--	--	--	--	76.0%
Light Rain	79.0%	78.6%	71.7%	75.1%	68.7%	64.4%	71.0%

Driver's Seat Belt Unweighted Usage by Road Type and Weather

	Primary Road - % Belted											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sunny	66.2%	63.5%	72.6%	76.6%	78.7%	79.4%	70.7%	77.1%	74.2%	73.1%	70.9%	70.9%
Cloudy	69.0%	76.8%	78.4%	73.2%	65.2%	74.6%	76.1%	--	--	--	--	--
Misty	71.0%	75.0%	--	79.3%	80.1%	85.5%	72.0%	--	--	--	--	--
Light Rain	64.7%	--	59.4%	66.6%	83.6%	75.1%	75.0%	82.2%	75.0%	26.2%	80.9%	75.3%

[illegible]

	Secondary Road - % Belted											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sunny	59.6%	56.2%	62.8%	64.5%	63.7%	64.6%	66.8%	70.9%	69.1%	68.8%	68.7%	67.9%
Cloudy	62.1%	60.9%	67.0%	58.0%	69.5%	65.4%	61.0%	--	--	--	--	--
Misty	63.6%	61.0%	--	63.7%	71.3%	70.0%	53.6%	--	--	--	--	--
Light Rain	54.0%	61.9%	50.4%	64.6%	64.6%	67.9%	80.7%	69.3%	79.4%	70.8%	72.0%	62.8%

[illegible]

	Local Road - % Belted											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sunny	58.4%	50.9%	58.3%	61.5%	55.9%	68.6%	60.8%	70.0%	68.4%	69.8%	70.3%	60.3%
Cloudy	55.1%	62.3%	60.9%	62.3%	69.7%	51.9%	56.5%	--	--	--	--	--
Misty	67.8%	59.0%	--	37.1%	77.3%	83.6%	92.3%	--	--	--	--	--
Light Rain	61.1%	50.7%	49.0%	--	85.7%	30.7%	38.2%	72.5%	--	56.4%	64.9%	62.4%

[illegible]

UNWEIGHTED OBSERVATIONS - OUTBOARD PASSENGERS

	Outboard Passengers - Percent Belted						
	2006	2007	2008	2009	2010	2011	2012
Primary Road	70.7%	69.7%	74.7%	75.6%	72.3%	80.9%	72.2%
Secondary Road	65.2%	58.7%	65.3%	63.4%	64.5%	68.7%	64.5%
Local Road	65.4%	53.3%	57.4%	60.8%	60.6%	60.1%	56.5%
Sunny Weather	66.0%	59.8%	68.7%	68.7%	66.8%	74.9%	65.8%
Cloudy	70.7%	72.0%	73.1%	67.3%	68.6%	70.1%	69.3%
Misty	73.8%	64.3%	--	71.0%	71.8%	80.7%	63.2%
Light Rain	68.6%	60.9%	59.5%	73.1%	71.9%	73.1%	82.5%

	Outboard Passengers - Percent Belted						
	2013	2014	2015	2016	2017	2018	2019
Primary Road	78.7%	73.2%	74.7%	72.1%	75.0%	86.3%	76.8%
Secondary Road	69.9%	71.6%	71.0%	70.2%	70.7%	77.7%	76.8%
Local Road	64.1%	66.2%	61.7%	67.9%	59.3%	81.1%	64.1%
Sunny Weather	71.8%	71.5%	71.6%	71.2%	71.2%	83.2%	74.0%
Cloudy	--	--	--	--	--	--	--
Misty	--	--	--	--	--	--	83.1%
Light Rain	77.9%	75.0%	71.7%	63.8%	70.3%	68.4%	76.0%

Outboard Passenger's Unweighted Seat Belt Usage by Road Type

	Primary Road - % Belted											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sunny	69.2%	63.9%	73.8%	76.0%	71.4%	81.7%	69.6%	78.1%	73.2%	74.7%	72.2%	75.2%
Cloudy	74.1%	79.6%	79.3%	71.7%	50.0%	76.9%	78.1%	--	--	--	--	--
Misty	73.3%	83.8%	--	78.9%	79.6%	88.4%	78.6%	--	--	--	--	--
Light Rain	69.9%	--	62.1%	75.2%	76.0%	80.7%	100.0%	80.4%	69.8%	75.2%	70.2%	73.8%

[illegible]

	Secondary Road - % Belted											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sunny	62.8%	56.9%	65.7%	64.4%	60.4%	68.6%	64.2%	69.9%	71.3%	70.2%	71.3%	71.0%
Cloudy	68.6%	61.8%	64.9%	62.7%	69.7%	63.7%	61.5%	--	--	--	--	--
Misty	66.7%	61.2%	--	56.5%	57.6%	75.4%	52.4%	--	--	--	--	--
Light Rain	64.1%	64.3%	57.1%	51.6%	67.7%	72.3%	84.2%	69.0%	74.5%	77.5%	60.9%	68.6%

[illegible]

	Local Road - % Belted											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sunny	63.0%	50.2%	57.0%	69.5%	55.7%	63.6%	57.2%	62.2%	66.2%	65.0%	67.9%	59.3%
Cloudy	67.6%	67.5%	62.2%	64.2%	66.3%	50.8%	54.7%	--	--	--	--	--
Misty	77.6%	45.7%	--	30.0%	69.5%	75.0%	66.7%	--	--	--	--	--
Light Rain	50.0%	60.0%	55.6%	--	100.0%	34.3%	60.0%	74.2%	--	45.3%	66.7%	60.9%

[illegible]

Appendix A

2019 NH Seat Belt Observation Study Times and Dates of Observed Sites

Observation schedule by Date of Observation

<u>Observation Day</u>	<u>Town(s)</u>	<u>Date</u>
23	Conway, Milton, Freedom	6/2/2019
10	Greenfield, Temple, Milford, Bedford, Amherst	6/3/2019
20	Campton, Woodstock, Campton, Lincoln, Woodstock	6/4/2019
4	Bedford, Manchester	6/5/2019
13	Barrington, Northwood, Hooksett	6/5/2019
7	Portsmouth, Hampton, Madbury	6/6/2019
18	Concord, Hopkinton	6/12/2019
16	Sutton, Warner, Hopkinton	6/13&20/2019
14	Strafford, Tamworth, Ossipee, Wakefield, Farmington	6/14/2019
1	Salem, Derry, Nashua	6/15/2019
2	Nashua	6/15/2019
6	Portsmouth, Hampton	6/17/2019
8	Walpole, Winchester, Hinsdale, Alstead, Westmoreland	6/17/2019
11	Bradford, Fitzwilliam, Rindge, Fitzwilliam, Dublin	6/18/2019
12	Swanzy, Keene	6/18/2019
15	New Boston, Weare, Goffstown, Dunbarton	6/20/2019
9	Nelson, Jaffrey, Marlow, Nashua	6/21/2019
19	Plymouth, Franklin, Manchester	6/21/2019
5	Exeter, Kingston, Stratham, Candia, Windham, Hampstead	6/22/2019
3	Londonderry, Manchester	6/23/2019
21	Bethlehem, Franconia	6/24/2019
22	Littleton	6/25/2019
17	Hanover, Henniker, Piermont, Enfield, Lyme, West Lebanon	6/30/2019

Observation schedule by “Observation Day” (grouped locations)

<u>Observation Day</u>	<u>Town(s)</u>	<u>Date</u>
1	Salem, Derry, Nashua	6/15/2019
2	Nashua	6/15/2019
3	Londonderry, Manchester	6/23/2019
4	Bedford, Manchester	6/5/2019
5	Exeter, Kingston, Stratham, Candia, Windham, Hampstead	6/22/2019
6	Portsmouth, Hampton	6/17/2019
7	Portsmouth, Hampton, Madbury	6/6/2019
8	Walpole, Winchester, Hinsdale, Alstead, Westmoreland	6/17/2019
9	Nelson, Jaffrey, Marlow, Nashua	6/21/2019
10	Greenfield, Temple, Milford, Bedford, Amherst	6/3/2019
11	Bradford, Fitzwilliam, Rindge, Fitzwilliam, Dublin	6/18/2019
12	Swanzey, Keene	6/18/2019
13	Barrington, Northwood, Hooksett	6/5/2019
14	Strafford, Tamworth, Ossipee, Wakefield, Farmington	6/14/2019
15	New Boston, Weare, Goffstown, Dunbarton	6/20/2019
16	Sutton, Warner, Hopkinton	6/13&20/2019
17	Hanover, Henniker, Piermont, Enfield, Lyme, West Lebanon	6/30/2019
18	Concord, Hopkinton	6/12/2019
19	Plymouth, Franklin, Manchester	6/21/2019
20	Campton, Woodstock, Campton, Lincoln, Woodstock	6/4/2019
21	Bethlehem, Franconia	6/24/2019
22	Littleton	6/25/2019
23	Conway, Milton, Freedom	6/2/2019

Appendix B: List of Sampled Road Segments by Road Type

Site #	County	Town	Road Type	Road Name	Latitude	Longitude	Segment Length (mi)	Random Number	Prob. of Selection
Primary Road Segments									
P1	Grafton	Enfield	Primary	I- 89 - Exit 14	43.5682	-72.1516	0.12328	0.00017	0.02649
P2	Merrimack	Hopkinton	Primary	I- 89 - Exit 4	43.1839	-71.6544	0.19359	0.00026	0.02649
P3	Rockingham	Portsmouth	Primary	I- 95 - Exit 7 Market Street	43.0782	-70.7772	0.39828	0.00046	0.02649
P4	Rockingham	Portsmouth	Primary	I- 95 - Exit 6 Woodbury Ave.	43.0738	-70.7831	0.07734	0.00075	0.02649
P5	Grafton	West Lebanon	Primary	I- 89 - Exit 20 S. Main Street	43.6332	-72.3257	0.23952	0.00193	0.02649
P6	Rockingham	Salem	Primary	I- 93 - Exit 3 Rt. 111	42.7844	-71.2595	0.44252	0.00240	0.02649
P7	Merrimack	Hooksett	Primary	I- 93 - Exit 11, Toll Plaza	43.0565	-71.4711	0.06110	0.00293	0.02649
P8	Merrimack	Sutton	Primary	I- 89 - Rest Stop	43.3372	-71.9095	0.11807	0.00298	0.02649
P9	Grafton	Littleton	Primary	I- 93 - Exit 41	44.2938	-71.7634	0.26176	0.00300	0.02649
P10	Grafton	Littleton	Primary	I- 93 - Exit 44, Rt. 135	44.3396	-71.8898	0.06464	0.00435	0.02649
P11	Rockingham	Salem	Primary	I- 93 - Exit 3 Rt. 111	42.8226	-71.2897	0.46710	0.00571	0.02649
P12	Rockingham	Hampton	Primary	I- 95 - NH Liquor Outlet	42.9386	-70.8614	0.30607	0.00605	0.02649
P13	Grafton	Plymouth	Primary	I- 93 - Exit 26, Rt. 3A	43.7788	-71.6792	0.09083	0.00649	0.02649
P14	Hillsborough	Manchester	Primary	I- 93 - Exit 6, Hanover St.	42.9926	-71.4174	0.16014	0.00663	0.02649
P15	Grafton	Littleton	Primary	I- 93 - Exit 43, W. Main St.	44.3291	-71.8745	0.00274	0.02450	0.02649
P16	Grafton	Franconia	Primary	I- 93 - Exit 34B, Cannon Mt. Tramway	44.1740	-71.6893	0.32450	0.00727	0.02649
P17	Grafton	Woodstock	Primary	I- 93 - Exit 30, Rt. 3	43.9588	-71.6803	0.00594	0.00754	0.02649
P18	Hillsborough	Manchester	Primary	I- 293 - Exit 4 Queen City Ave.	42.9634	-71.4764	0.21388	0.00756	0.02649
P19	Rockingham	Londonderry	Primary	I- 93 - Exit 5, Rt. 28	42.9152	-71.3703	0.19105	0.00822	0.02649
P20	Merrimack	Concord	Primary	I- 393 @ Main Street	43.2168	-71.5332	0.05276	0.00946	0.02649
P21	Merrimack	Hopkinton	Primary	I- 89 - Exit 5, Rt. 9	43.1817	-71.6800	0.21225	0.01010	0.02649
P22	Rockingham	Portsmouth	Primary	I- 95 - Exit 3B, Rt. 33 @ Rt. 33 light	43.0544	-70.8093	0.39487	0.01058	0.02649
P23	Merrimack	Warner	Primary	I- 89, Exit 8	43.2531	-71.7502	0.23942	0.01092	0.02649
P24	Hillsborough	Bedford	Primary	Frederick E Everett Tpke, Airport Exit Rt. 3. South	42.9226	-71.4666	0.24011	0.01189	0.02649
P25	Hillsborough	Manchester	Primary	I- 93 - Exit 8, Bridge St.	42.9945	-71.4163	0.11316	0.01198	0.02649
P26	Grafton	Littleton	Primary	I- 93 - Exit 42, Rt. 302	44.3092	-71.7995	0.14573	0.01559	0.02649
P27	Merrimack	Concord	Primary	I- 393 - Exit 3, Rt. 106	43.2307	-71.4884	0.62033	0.01578	0.02649
P28	Grafton	Bethlehem	Primary	I- 93 - Exit 40, Rt. 302	44.2848	-71.7448	0.04248	0.01827	0.02649
P29	Grafton	Campton	Primary	I- 93 - Exit 28, Rt. 49	43.8388	-71.6507	0.00824	0.01914	0.02649
P30	Grafton	Bethlehem	Primary	I- 93 - Exit 40, Rt. 302	44.2423	-71.7586	0.78180	0.02089	0.02649
P31	Grafton	Plymouth	Primary	I- 93 - Exit 25, Rt. 175	43.7675	-71.6816	0.13458	0.02130	0.02649
P32	Rockingham	Derry	Primary	I- 93 - Exit 4, Rt. 102	42.9073	-71.3662	0.65894	0.02189	0.02649
P33	Hillsborough	Manchester	Primary	I- 293 - Exit 4, Queen City Ave.	42.9498	-71.4696	0.82211	0.02204	0.02649
P34	Rockingham	Portsmouth	Primary	I- 95 - Exit 7, Market St.	43.0830	-70.7739	0.18183	0.02252	0.02649
P35	Grafton	Woodstock	Primary	I- 93 - Trailhead Parking	44.1425	-71.6823	0.04878	0.02266	0.02649

Site #	County	Town	Road Type	Road Name	Latitude	Longitude	Segment Length (mi)	Random Number	Prob. of Selection
P36	Rockingham	Hampton	Primary	I- 95 - NH Liquor Outlet	42.9541	-70.8582	0.26357	0.02319	0.02649
P37	Hillsborough	Manchester	Primary	I- 293 - Exit 5, Granite St.	42.9763	-71.4720	0.09357	0.02438	0.02649
P38	Rockingham	Portsmouth	Primary	I- 95 - Exit 6, Woodbury Ave.	43.0742	-70.7825	0.00910	0.01286	0.02649
P39	Merrimack	Sutton	Primary	I- 89 - Exit 10	43.3142	-71.8597	0.25640	0.02478	0.02649
P40	Merrimack	Sutton	Primary	I- 89 - Exit 10,	43.3544	-71.9220	0.23057	0.02528	0.02649
Alternate Primary Road Segments									
P41	Rockingham	Hampton	Primary	I- 95 - NH Liquor Outlet	42.9704	-70.8549	0.16768	0.02555	
P42	Grafton	Lebanon	Primary	I- 89 - Exit 18, Rt. 120	43.6450	-72.2330	0.12782	0.02580	
P43	Merrimack	Hopkinton	Primary	I- 89 - Exit 7, Rt. 103	43.2403	-71.7465	0.04765	0.02657	
P44	Hillsborough	Manchester	Primary	I- 293 - Exit 6, Amoskeag	42.9873	-71.4717	0.34040	0.02825	
P45	Merrimack	Hopkinton	Primary	I- 89 - Exit 6, Rt. 127	43.2491	-71.7491	0.30913	0.02909	
Secondary Road Segments									
S1	Cheshire	Winchester	Secondary	Warwick Rd, Rt. 78 @ Parkers Camp Rd	42.7298	-72.3645	0.03589	0.00001	0.00197
S2	Rockingham	Portsmouth	Secondary	Pleasant St @ Hancock St.	43.0738	-70.7526	0.05150	0.00007	0.00197
S3	Merrimack	Warner	Secondary	State Rte 103 @ Schoodac Rd.	43.2734	-71.7934	0.03386	0.00009	0.00197
S4	Rockingham	Exeter	Secondary	Brentwood Rd, Rt. 111A @ Epping Road	42.9843	-70.9683	0.05783	0.00009	0.00197
S5	Cheshire	Walpole?	Secondary	River St, Rt. 12 @ Arch Bridge	43.1390	-72.4470	0.02595	0.00010	0.00197
S6	Cheshire	Fitzwilliam	Secondary	State Rte 12 @ Rt. 119	42.7885	-72.1482	0.01587	0.00010	0.00197
S7	Rockingham	Candia	Secondary	State Rte 101 - Exit 3, Deerfield, Candia	43.0337	-71.2541	0.11667	0.00017	0.00197
S8	Strafford	Farmington	Secondary	Charles St, Rt. 153 @ Edgerly Park	43.3941	-71.0654	0.01910	0.00019	0.00197
S9	Hillsborough	Manchester	Secondary	Beech St @ Somerville St.	42.9760	-71.4554	0.06393	0.00019	0.00197
S10	Grafton	Lincoln	Secondary	Kancamagus Hwy @ Northbound exit from I-93	44.0328	-71.6804	0.07408	0.00021	0.00197
S11	Cheshire	Rindge	Secondary	State Rte 119 @ Rt. 202	42.7686	-72.0606	0.10116	0.00035	0.00197
S12	Rockingham	Northwood	Secondary	Rochester Rd, Rt. 202	43.1983	-71.1395	0.00481	0.00039	0.00197
S13	Rockingham	Windham	Secondary	Haverhill Rd, Rt. 111 @ London Bridge Rd.	42.8017	-71.3174	0.33751	0.00044	0.00197
S14	Rockingham	Londonderry	Secondary	Rockingham Rd, Rt. 28 @ I93 Southbound exit ramp	42.9164	-71.3708	0.03638	0.00056	0.00197
S15	Cheshire	Hinsdale	Secondary	Northfield Rd, Rt63 @ curve	42.7349	-72.4554	0.07892	0.00057	0.00197
S16	Grafton	Franconia	Secondary	Forest Hills Rd, Rt 142 @ Rt 18	44.2226	-71.7332	0.00382	0.00057	0.00197
S17	Strafford	Milton	Secondary	White Mountain Hwy, Rt 125 @ RR Tracks	43.4319	-70.9883	0.03077	0.00060	0.00197
S18	Merrimack	Concord	Secondary	Sheep Davis Rd, Rt. 106 @ Regional Rd.	43.2007	-71.4817	0.10256	0.00073	0.00197
S19	Hillsborough	Milford	Secondary	State Rte 101 @ Rt. 101A	42.8417	-71.7034	0.02415	0.00077	0.00197
S20	Cheshire	Jaffrey	Secondary	Turnpike Rd, Rt. 124 @ Rt. 202	42.8106	-72.0101	0.05694	0.00084	0.00197
S21	Cheshire	Keene	Secondary	Main St, Rt 12 @ Rt. 101	42.9150	-72.2700	0.00319	0.00084	0.00197
S22	Hillsborough	Nashua	Secondary	Main Dunstable Rd, Rt 111A @ Westgate Crossing	42.7309	-71.5022	0.05569	0.00085	0.00197

Site #	County	Town	Road Type	Road Name	Latitude	Longitude	Segment Length (mi)	Random Number	Prob. of Selection
S23	Cheshire	Swanzey	Secondary	Monadnock Hwy, Rt. 12 @ Lake St.	42.9092	-72.2607	0.01848	0.00095	0.00197
S24	Hillsborough	Nashua	Secondary	Amherst St, Rt. 101A @ Cotton Rd. (Market Basket)	42.7834	-71.5050	0.06822	0.00100	0.00197
S25	Cheshire	Dublin	Secondary	State Rte 101 @ Rt. 137	42.9013	-72.0237	0.02453	0.00121	0.00197
S26	Hillsborough	Greenfield	Secondary	Rt. 136 @ S. Francestown Rd	42.9639	-71.8556	0.07018	0.00122	0.00197
S27	Rockingham	Stratham	Secondary	Portsmouth Ave, Rt. 33 @ Winnicutt Rd.	43.0293	-70.9097	0.10795	0.00131	0.00197
S28	Cheshire	Keene	Secondary	Franklin Pierce Hwy, Rt. 9 @ Rt. 10, Gilsum Rd.	42.9701	-72.2212	0.01882	0.00138	0.00197
S29	Carroll	Conway	Secondary	White Mountain Hwy, Rt. 16 @ Main Street	43.9815	-71.1150	0.02406	0.00139	0.00197
S30	Merrimack	Manchester	Secondary	Londonderry Tpke, Rt. 288 @ Smyth Rd,	43.0284	-71.4102	0.00676	0.00149	0.00197
S31	Hillsborough	New Boston	Secondary	State Rte 13 @ Byam Rd.	43.0010	-71.6618	0.03324	0.00151	0.00197
S32	Merrimack	Concord	Secondary	Loudon Rd, Rt. 9 @ Light by McDonalds	43.2132	-71.5133	0.15915	0.00161	0.00197
S33	Cheshire	Alstead	Secondary	Alstead Center Rd, Rt. 12A @ Chartier Ln	43.0927	-72.3244	0.06188	0.00162	0.00197
S34	Hillsborough	Manchester	Secondary	Elm St @ Webster St	43.0039	-71.4650	0.10206	0.00170	0.00197
S35	Cheshire	Marlow	Secondary	State Rte 10 @ Stone Pond Rd.	43.1588	-72.2170	0.05411	0.00172	0.00197
S36	Merrimack	Concord	Secondary	Hopkinton Rd, Rt. 202 @ Millbrook Sculpture Garden	43.1920	-71.6064	0.25336	0.00180	0.00197
S37	Hillsborough	New Boston	Secondary	Weare Rd, Rt. 77 @ Rt. 136	42.9949	-71.6884	0.56974	0.00183	0.00197
S38	Grafton	Bethlehem	Secondary	Main St @ Arlington St.	44.2792	-71.7058	0.15398	0.00189	0.00197
S39	Carroll	Freedom	Secondary	Porter Rd, Rt. 25 @ Wagon Wheel Rd.	43.7972	-71.0104	0.22277	0.00193	0.00197
S40	Carroll	Tamworth	Secondary	Chocorua Rd, Rt 113 @ Page Hill Rd.	43.8796	-71.2384	0.13413	0.00196	0.00197
Alternate Secondary Road Segments									
S41	Rockingham	Hampton	Secondary	Winnacunnet Rd @ Landing Rd	42.9322	-70.8276	0.05786	0.00204	
S42	Rockingham	Brentwood	Secondary	Exeter Rd @ Giles Rd.	42.9531	-71.0103	0.03567	0.00207	
S43	Grafton	Haverhill	Secondary	Wild Ammonoosuc Rd, Rt 112 @ Rt 302, Rum Hill Rd.	44.1515	-71.9751	0.20076	0.00214	
S44	Rockingham	New Castle	Secondary	Wentworth Rd @ Great Island Common entrance	43.0654	-70.7167	0.01226	0.00222	
S45	Hillsborough	Francestown	Secondary	Bennington Rd	43.0122	-71.8726	0.01664	0.00236	
Local Road Segments									
L01	Hillsborough	Manchester	Local	Bridge St @ Beech St.	42.9956	-71.4545	0.02576	0.00003	0.00036
L02	Cheshire	Fitzwilliam	Local	Richmond Rd. @ Rhododendron Dr.	42.7760	-72.1540	0.06272	0.00003	0.00036
L03	Grafton	Hanover	Local	N Main St @ Maynard St.	43.7069	-72.2893	0.04424	0.00003	0.00036
L04	Carroll	Wakefield	Local	Crew Rd @ Buck Rd.	43.6286	-71.0367	0.08209	0.00003	0.00036
L05	Hillsborough	Manchester	Local	Hickory St b/w Brent and Trolley	42.9000	-71.4458	0.07020	0.00004	0.00036
L06	Hillsborough	Weare	Local	River Rd @ E. Weare Rd.	43.1065	-71.7091	0.10901	0.00004	0.00036
L07	Hillsborough	Temple	Local	West Rd @ Holden Rd.	42.8104	-71.8820	0.03102	0.00004	0.00036
L08	Hillsborough	Nashua	Local	Dorchester Way@ Westminster Dr.	42.7826	-71.4845	0.02152	0.00004	0.00036

Site #	County	Town	Road Type	Road Name	Latitude	Longitude	Segment Length (mi)	Random Number	Prob. of Selection
L09	Hillsborough	Nashua	Local	Wood St b/w E. Stark and Beasom	42.7744	-71.4605	0.12215	0.00007	0.00036
L10	Grafton	Piermont	Local	Church St @ Rt. 25	43.9799	-72.0810	0.02372	0.00008	0.00036
L11	Cheshire	Keene	Local	Bradford Rd @ Greenbriar	42.9353	-72.3160	0.23055	0.00009	0.00036
L12	Strafford	Madbury	Local	Perkins Rd @ Evans Rd.	43.1577	-70.9273	0.07456	0.00009	0.00036
L13	Cheshire	Westmoreland	Local	Old Rt. 12 @ Rt. 12	43.0177	-72.4385	0.04304	0.00009	0.00036
L14	Hillsborough	New Boston	Local	Dennison Rd @ Birch Ln	42.9882	-71.7155	0.65803	0.00010	0.00036
L15	Merrimack	Bradford	Local	Center Rd @ Rt. 103	43.2609	-71.9542	0.21834	0.00012	0.00036
L16	Merrimack	Franklin	Local	Prospect St @ Fairway Dr.	43.4195	-71.6390	0.10467	0.00015	0.00036
L17	Merrimack	Dunbarton	Local	School St @ Robert Rogers Rd.	43.1031	-71.6160	0.12835	0.00015	0.00036
L18	Rockingham	Hampton Beach	Local	Glade Path @ Rt. 101	42.9164	-70.8159	0.01738	0.00016	0.00036
L19	Cheshire	Keene	Local	Railroad St @ Wells St.	42.9325	-72.2765	0.06897	0.00017	0.00036
L20	Hillsborough	Bedford	Local	Quaker Ct, @ Pilgrim Dr.	42.9515	-71.4991	0.05764	0.00018	0.00036
L21	Hillsborough	Amherst	Local	Eastern Ave @ Airline Dr.	42.8127	-71.5826	0.18878	0.00019	0.00036
L22	Hillsborough	Goffstown	Local	Gorham Pond Rd @ Stonebridge CC	43.0401	-71.6277	0.12490	0.00020	0.00036
L23	Cheshire	Nelson	Local	Brickyard Rd	42.9824	-72.0941	0.13645	0.00022	0.00036
L24	Cheshire	Jaffrey	Local	Thayer Rd @ Michigan Rd.	42.7890	-72.0143	0.09762	0.00022	0.00036
L25	Strafford	Strafford	Local	Tristan Dr @ Camelot Shore Dr.	43.3270	-71.0523	0.01223	0.00023	0.00036
L26	Rockingham	Salem	Local	Haverhill Rd @ Norwood Rd.	42.8403	-71.2018	0.38316	0.00024	0.00036
L27	Rockingham	Kingston	Local	Sunshine Dr @ Meeks Rd.	42.8972	-71.0668	0.19176	0.00024	0.00036
L28	Rockingham	Derry	Local	Pearl St @ Crystal Eve.	42.8822	-71.3270	0.07373	0.00025	0.00036
L29	Carroll	Ossipee	Local	Old Rte 28 @ Rt. 28	43.6871	-71.1159	0.14289	0.00025	0.00036
L30	Grafton	Littleton	Local	Brook Rd @ Reddington St.	44.2979	-71.7484	0.41693	0.00027	0.00036
L31	Strafford	Barrington	Local	Barrington Shores Campground @ Hall Rd.	43.1855	-71.0277	0.11796	0.00030	0.00036
L32	Hillsborough	Nashua	Local	Fitzpatrick Cir @ Country Hill Rd.	42.7489	-71.5135	0.07550	0.00030	0.00036
L33	Grafton	Campton	Local	Ham Farm Rd @ Rt. 3	43.9004	-71.6854	0.12237	0.00030	0.00036
L34	Hillsborough	Nashua	Local	Ferry Rd @ Manchester Rd.	42.7824	-71.4840	0.00658	0.00032	0.00036
L35	Grafton	Lyme	Local	Pinnacle Rd @ Rt. 10	43.8306	-72.1422	0.07510	0.00032	0.00036
L36	Hillsborough	Nashua	Local	E Dunstable Rd @ Judith Dr	42.7311	-71.4713	0.05117	0.00035	0.00036
L37	Grafton	Plymouth	Local	Fairgrounds Rd @ Beech Hill Rd.	43.7748	-71.7073	0.03276	0.00036	0.00036
L38	Rockingham	Portsmouth	Local	Osprey Dr @ Portsmouth Blvd	43.0892	-70.7801	0.33185	0.00037	0.00036
L39	Hillsborough	Nashua	Local	Satin Ave @ Ponderosa Ave	42.7130	-71.5362	0.12467	0.00040	0.00036
L40	Rockingham	Salem	Local	Gulliver Ave @ Hunt St.	42.8273	-71.2206	0.04920	0.00041	0.00036
Alternate Local Road Segments									
L41	Grafton	Bethlehem	Local	Cedar Dr @ Rt 3402, Main Street	44.2818	-71.6544	0.04919	0.00045	
L42	Grafton	Hanover	Local	Grant Rd @ River Road	43.7621	-72.2145	0.16623	0.00046	

Appendix C: NH Seat Belt Survey – Data Collection Form

COVER SHEET

Date: _____ - _____ - 2019

Site Identification:

Site Location:

Site Number: _____

Alternate Site Information:

Is this an alternate site? No Yes
(Circle one)

If yes, please provide a reason for using an alternate site from the reserve list:

Site Description:

Assigned traffic flow: North South East West

Number of lanes observed: _____

Total number of lanes in this direction: _____

Weather Conditions: Clear Light Fog Light Rain

Site Start and End Time:

Start time for observations: _____ am/pm

End time for observations: _____ am/pm

(Total observation period MUST last exactly 60 minutes)

New Hampshire Seat Belt Survey – Observation Form

Site Number: _____

Page ____ of ____

Responses: Y = Yes, N = No, U = Unknown, NP = No Passenger

VEHICLE NUMBER	DRIVER SEATBELT USE			PASSENGER SEATBELT USE			
1	Y	N	U	Y	N	U	NP
2	Y	N	U	Y	N	U	NP
3	Y	N	U	Y	N	U	NP
4	Y	N	U	Y	N	U	NP
5	Y	N	U	Y	N	U	NP
6	Y	N	U	Y	N	U	NP
7	Y	N	U	Y	N	U	NP
8	Y	N	U	Y	N	U	NP
9	Y	N	U	Y	N	U	NP
10	Y	N	U	Y	N	U	NP
11	Y	N	U	Y	N	U	NP
12	Y	N	U	Y	N	U	NP
13	Y	N	U	Y	N	U	NP
14	Y	N	U	Y	N	U	NP
15	Y	N	U	Y	N	U	NP
16	Y	N	U	Y	N	U	NP
17	Y	N	U	Y	N	U	NP
18	Y	N	U	Y	N	U	NP
19	Y	N	U	Y	N	U	NP
20	Y	N	U	Y	N	U	NP
21	Y	N	U	Y	N	U	NP
22	Y	N	U	Y	N	U	NP
23	Y	N	U	Y	N	U	NP
24	Y	N	U	Y	N	U	NP
25	Y	N	U	Y	N	U	NP
26	Y	N	U	Y	N	U	NP
27	Y	N	U	Y	N	U	NP
28	Y	N	U	Y	N	U	NP
29	Y	N	U	Y	N	U	NP
30	Y	N	U	Y	N	U	NP
31	Y	N	U	Y	N	U	NP
32	Y	N	U	Y	N	U	NP
33	Y	N	U	Y	N	U	NP
34	Y	N	U	Y	N	U	NP
35	Y	N	U	Y	N	U	NP
36	Y	N	U	Y	N	U	NP
37	Y	N	U	Y	N	U	NP
38	Y	N	U	Y	N	U	NP
39	Y	N	U	Y	N	U	NP
40	Y	N	U	Y	N	U	NP